

### **Remarks**

Applicant respectfully requests reconsideration in view of the foregoing amendments and the following remarks. Claims 1-25 are pending in the application. Claims 16-24 are allowed. The amendment cancels claim 13 without prejudice. With entry of this amendment, claims 1-12 and 14-25 are in the application.

### ***Allowable Subject Matter***

The Action at 3 indicates that claims 3, 7 and 13 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form. The Action also indicates that claims 16-24 are allowed.

### ***Rejections under 35 U.S.C. § 103(a)***

Claims 1, 2, 4-6, 8-12, 14, 15 and 25 stand rejected under 35 U.S.C. § 103(a) over U.S. Pat. No. 5,636,035 to Whittaker et al. (Whittaker) in view of the Action's assertion at 2 that it would have been obvious to "take into account the modulation index of a signal." Applicant respectfully traverses this rejection.

### ***Independent Claim 1***

Claim 1 is directed toward:

A method, comprising:  
providing a first frequency-modulated light signal having a first modulation index;  
providing a second frequency-modulated light signal having a second modulation index;  
controlling a difference between the first modulation index and the second modulation index; and  
*combining the first frequency-modulated light signal and the second frequency-modulated light signal* to reduce residual amplitude modulation in accordance with the difference.

Whittaker does not teach or suggest such a method. For example, Whittaker is silent as to "combining the first frequency-modulated light signal and the second frequency-modulated light signal to reduce residual amplitude modulation in accordance with the difference." More generally, Whittaker is silent as to combining light signals. Instead, Whittaker states that a tunable diode laser 16 generates a laser beam 17 that passes through a monochromator 20. See,

e.g., col. 6, lines 54-59, and Fig. 1. However, Whittaker does not teach or suggest that the laser beam is combined with another laser beam, for example.

Additionally, Applicant respectfully disagrees with the Action's reliance on the assertion at 2 that to "take into account the modulation index of a signal . . . would have been obvious to one of ordinary skill in the art in order to perform the nulling effect of the undesired amplitude modulation. . . ." In any case, claim 1 is allowable for at least the above reasons. Applicant respectfully requests withdrawal of the rejection.

Claims 2 and 4-6 depend from claim 1 and are allowable for at least the reasons stated above with respect to their parent claim, as well as for the unique combinations of features recited therein. Applicant respectfully requests withdrawal of the rejection.

#### *Independent Claim 8*

Amended claim 8 is directed toward:

A method, comprising:  
providing frequency-modulated light carrying information with undesired amplitude modulation, the frequency-modulated light being provided with a first modulation index;  
generating other light that is frequency-modulated with a second modulation index, the other light having a carrier frequency different than the frequency-modulated light;  
and  
at least partially nulling the undesired amplitude modulation with the other light to improve detection of the information, *wherein the first modulation index is larger than the second modulation index.*

Amended claim 8 incorporates features of original claim 13, which this amendment cancels without prejudice. As the Action at 3 indicates that claim 13 contains allowable subject matter, claim 8 is now likewise allowable for at least similar reasons. Applicant respectfully requests withdrawal of the rejection.

Claims 9-12, 14 and 15 depend from claim 8 and are allowable for at least the reasons stated above with respect to their parent claim, as well as for the unique combinations of features recited therein. Applicant respectfully requests withdrawal of the rejection.

#### *Independent Claim 25*

Amended claim 25 is directed toward:

An apparatus, comprising:

means for interrogating a material to provide a first frequency-modulated light signal having a first modulation index, the first frequency-modulated light carrying spectroscopic information with residual amplitude modulation;

means for generating a second frequency-modulated *light* signal having a second modulation index;

*means for combining the first frequency-modulated light signal and the second frequency-modulated light signal; and*

means for reducing the residual amplitude modulation in accordance with a difference between the first modulation index and the second modulation index to improve detection of the spectroscopic information.

For example, the original specification states:

Detection subsystem 38 includes light detector 50 and spectroscopic information processing devices(s) 54. Detector 50 senses a combination of return/response light signal 34 and correction light signal 42.

See page 7, lines 18-20. See also Fig. 1 and original claim 1. The amendments also correct some obvious typographical errors.

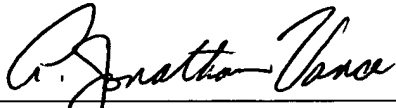
Whittaker does not teach or suggest such an apparatus. For example, as explained above with respect to claim 1, Whittaker is silent as to combining light signals. As is also stated above with respect to claim 1, Applicant respectfully disagrees with the Action's assertion at 2 that to "take into account the modulation index of a signal . . . would have been obvious to one of ordinary skill in the art in order to perform the nulling effect of the undesired amplitude modulation. . . ." For at least these reasons, claim 25 is allowable over Whittaker. Applicant respectfully requests withdrawal of the rejection.

***Conclusion***

In light of the foregoing amendments and remarks, all claims are now in condition for allowance. Applicant respectfully requests action to such end. Should any issues remain, the Examiner is requested to call the undersigned attorney.

Respectfully submitted,

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